Combined intravenous and endovascular treatment versus primary mechanical thrombectomy. The Italian Registry of Endovascular Treatment in Acute Stroke

Abstract

Background

Whether mechanical thrombectomy alone may achieve better or at least equal clinical outcome than mechanical thrombectomy combined with intravenous thrombolysis is a matter of debate.

Methods

From the Italian Registry of Endovascular Stroke Treatment, we extracted all cases treated with intravenous thrombolysis followed by mechanical thrombectomy or with primary mechanical thrombectomy for anterior circulation stroke due to proximal vessel occlusion. We included only patients who would have qualified for intravenous thrombolysis. We compared outcomes of the two groups by using multivariate regression analysis and propensity score method.

Results

We included 1148 patients, treated with combined intravenous thrombolysis and mechanical thrombectomy therapy (n = 635; 55.3%), or with mechanical thrombectomy alone (n = 513; 44.7%). Demographic and baseline clinical characteristics did not differ between the two groups, except for a shorter onset to groin puncture time ($p < 0.05$) in the mechanical thrombectomy group. A shift in the 90-day modified Rankin Scale distributions toward a better outcome was found in favor of the combined treatment (adjusted common odds ratio = 1.3; 95% confidence interval: 1.04–1.66). Multivariate analyses on binary outcome show that subjects who underwent combined treatment had higher probability to survive with modified Rankin Scale 0–3 (odds ratio = 1.42; 95% confidence interval: 1.04–1.95) and lower case fatality rate (odds ratio = 0.6; 95% confidence interval: 0.44–0.9). Hemorrhagic transformation did not differ between the two groups.

Conclusion

These data seem to indicate that combined intravenous thrombolysis and mechanical thrombectomy could be associated with lower probability of death or severe dependency after three months from stroke due to large vessel occlusion, supporting the current guidelines of treating eligible patients with intravenous thrombolysis before mechanical thrombectomy.